IN THE CLAIMS:

Please amend claim 11 as follows.

1. (Previously Presented) A method for forming protected routes, the method comprising:

routing several functional layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top layer, each routing in turn taking into account protection demands, and taking into account the routing possibilities in the layer below,

wherein each route includes two separate paths in a communications network, which network includes several functional layers on top of one another, each layer forming demands for protected routes in the layers below,

wherein after each routing of the layer under formation, the protection demands are assessed and the routings of the layers below are changed in a way that the first below layer is routed first again, and the second below layer is routed second,

wherein the routing is continued until there is no need to route again and the protection demands are met.

2- 3. (Cancelled).

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4. (Previously Presented) A method according to claim 1, wherein the taking of the demands into account further comprises taking into account the demands from the layer under formation and from the layers above the layer under formation.

5. (Previously Presented) A method according to claim 1, wherein the routing under formation further comprises:

finding the two shortest routes from the all route candidates, each route formed by transmission lines one after the other, each transmission line having a weight describing the length of the transmission line, and all transmission lines to marked as unprotected, reliable, or protected,

fixing one of the found routes,

calculating new weights for the transmission lines which are common to both the found routes by adding a penalty weight to the weights of the common transmission lines,

finding a new shortest route for the route which is not fixed,

repeating the step of calculating new weights and the steps of finding a new shortest route until the last route found is no better than the route found before.

6. (Previously Presented) A method according to claim 4, wherein taking into account the routing possibilities in the layer below further comprises forming a sublayer which

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describes possibilities for protected routes, the forming comprising:

taking all nodes from the layer below the layer under formation into the sublayer,

taking reliable and protected transmission lines from the layer below the layer under formation into the sublayer,

forming a new transmission line between each pair of the nodes where can be found two separate routes in the layer below the layer under formation,

using the sublayer when routing the layer under formation in a way that the sublayer represents the layer below the layer under formation.

7. (Previously Presented) A method according to claim 1, wherein the taking of the demands into account further comprises taking into account the demands from the layer under formation and from the layers above the layer under formation, and changing the routing under formation comprises:

fixing all existing routes except the route which is desired to change,

calculating, for the transmission lines, which are desired to keep separate from the transmission line whose route is desired to change, each transmission line having a weight describing the length of the transmission line, new weights, by adding a penalty weight to the weights of the transmission lines, which are desired to keep separate,

finding a new shortest route for the link whose route is not fixed,

repeating each of the previous steps until the last route found is no better than the route found before.

8. (Previously Presented) A network device configured to form protected routes, the device comprising:

routing unit configured to route several functional layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top layer, each routing in turn taking into account protection demands, and taking into account the routing possibilities in the layer below,

wherein each route includes two separate paths in a communications network, which network includes several functional layers on top of one another, each layer forming demands for protected routes in the layers below, and

a protection unit, configured such that wherein after each routing of the layer under formation, the protection demands are assessed and the routings of the layers below are changed in a way that the first below layer is routed first again, and the second below layer is routed second,

wherein the routing is continued until there is no need to route again and the protection demands are met.

9. (Previously Presented) The network device according to claim 8, wherein the

routing unit is further configured to take into account the demands from the layer under formation and from the layers above the layer under formation.

10. (Previously Presented) The network device according to claim 8, wherein the routing unit is further configured to:

find the two shortest routes from the all route candidates, each route formed by transmission lines one after the other, each transmission line having a weight describing the length of the transmission line, and all transmission lines to marked as unprotected, reliable, or protected;

fix one of the found routes;

calculate new weights for the transmission lines which are common to both the found routes by adding a penalty weight to the weights of the common transmission lines,

find a new shortest route for the route which is not fixed; and

repeat the calculation of new weights and finding a new shortest route until the last route found is no better than the route found before.

11. (Currently Amended) A method The network device according to claim 9, wherein the routing unit is further configured to take into account the routing possibilities in the layer below further and includes forming a sublayer which describes possibilities for protected routes, the routing unit being configured to:

take all nodes from the layer below the layer under formation into the sublayer;

take reliable and protected transmission lines from the layer below the layer under formation into the sublayer;

form a new transmission line between each pair of the nodes where can be found two separate routes in the layer below the layer under formation; and

use the sublayer when routing the layer under formation in a way that the sublayer represents the layer below the layer under formation.

12. (Previously Presented) The network device according to claim 8, wherein the routing unit is further configured to:

taking into account the demands from the layer under formation and from the layers above the layer under formation, and change the routing under formation:

fix all existing routes except the route which is desired to change;

calculate for the transmission lines, which are desired to keep separate from the transmission line whose route is desired to change, each transmission line having a weight describing the length of the transmission line, new weights, by adding a penalty weight to the weights of the transmission lines, which are desired to keep separate;

find a new shortest route for the link whose route is not fixed; and

repeat each of the previous steps until the last route found is no better than the route found before.